1.1 Radio Astronomy

1.1.1 Maintenance and Calibration

- Testing of the Jupiter observational mode for IYA09 celebration **"Jupiter: Project 24"** in November 22nd (ATOT IYA09 Devel, DSS-63 DOYs 277 & 305). Measured S-band gain curve.
- In preparation for L-band EVN incoming observations, collected data to improve L-band pointing model, measured L-band gain curve and measured noise diode temperature versus frequency (EGS Calibration, DSS-63 DOYs 297 & 298).
- In preparation for Q-band EVN incoming observation, checked Q-band pointing model (Maint DSS-54 DOY 302) and measured Q-band noise diode temperature versus frequency (STA dir DSS-54 DOY 298).
- Field System rxg files for L and Q bands updated.
- Generated observing files and prepare Mark5 modules for incoming EVN supports (L-band and Q-band).
- Performed a VLBI type observing test with DSS-54 to evaluate the performance of recent installation of new antenna controller cards (Maint DSS-54 DOY 302).

1.1.2 R&D and Outreach activities

Mark5 Debian Etch s/w installation on R&D Mark5 recorder#2 in progress. Software retrieved from Haystack Observatory.

The DSN event **"Jupiter: Project 24"** to celebrate the IYA09 is currently being organized with the participation of GAVRT, PARTNeR and the RA Departments from CDSCC and MDSCC. Following related events are being prepared:

- Preparation of the outreach talks to be imparted at CDSCC and at the Spanish Instituto Cervantes in Sydney: http://sydney.cervantes.es/en/culture_spanish/upcoming_activities_culture_spanish.htm

- Preparation of a paper for the PARTNeR journal (PARTNeRama, Nov09) about **"Jupiter: Project 24".**

- Preparation of a poster about the event to show at the MDSCC Visitor Center during the Science week (Nov 9th-22nd).

- Development of a labview application to show in real time via web the Jupiter S-band light curve while observing, in collaboration with PARTNeR staff.

1.1.3 Observations

1.1.3.1 Interferometry

MDSCC participated in 4 Very Long Baseline Interferometric (VLBI) observations (875 min in total):

- RFC Clock Synchronization on DSS-65 (2 observations; 480 min): 100% data collected for the first one; data degraded due to subreflector left in wrong position (DR#M105528) for the second one.
- TEMPO X/Ka on DSS-55 (1 observation; 235 min): 73 sources lost (82% of total) because activity was started late (DR# M105519). Objective: demonstrate the feasibility of performing a TEMPO pass using X/Ka bands, 448 Mbps recording, using the 4MHz VC filters.
- VLBI R&D M5 on DSS-54 (1 observation; 160 min): 100% data collected. This was an X-Band activity to test a new technique for Delta DOR.